



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/579,930

05/19/2006

Radu Serban Jasinski

FR 030146

3707

24737

7590

04/30/2009

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

CHAWAN, SHEELA C

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

04/30/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,930	<b>Applicant(s)</b> JASINSCHI, RADU SERBAN	
	<b>Examiner</b> SHEELA C. CHAWAN	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

2. Fig 3 is objected to as depicting a block diagram without “readily identifiable” descriptors of each block, as required by 37 CFR 1.84(n) requires: “labeled representation” graphical symbols, such as blocks; and any that are “not universally recognized may be used, subject to approval by the Office, if they are not likely to be confused with existing conventional symbols, and if they are readily identifiable”. In the case of fig. 3 the blocks are not readily identifiable per se. Each block should have been a corresponding label that identifies its function or purpose. A proposed drawing correction or corrected drawings are requires in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

3. Claims 1, 15, 19 and 22 are objected to because of the following informalities:  
  
In claim 1, line 3, change “,” to -- ; -- .  
  
In claim 1, line 5, change “,” to -- ; -- .  
  
In claim 1, line 7, change “,” to -- ; -- .  
  
Similarly claims 15, 19, 22 need to be corrected.  
  
Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14, 17, 18, are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit<sup>1</sup>, relying upon Supreme Court precedent<sup>2</sup>, has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590”). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor positively tie to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

---

<sup>1</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

<sup>2</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

Claim 22 is rejected under 35U.S.C. 101 because the claimed invention 22 is directed to non-statutory subject matter. The terminology “A computer useable medium” alone has no set definition. The following claim formats are acceptable and not subject to a 101 rejection “A computer readable medium encoded with a computer program” for performing the steps of ...”

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17, 18 and 21, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, line 1 “A signal processor system programmed to operate according to the method” of claim 1 as recited vague and unclear, how can a signal processor system programmed in the method claim 1.

In claim 18, line 1 “A de-interlacing system for television (TV) apparatus, the de-interlacing system operating” to the method claim 1, as recited vague and unclear.

In claim 21, line 1 “A video storage medium” A de-interlacing system for television (TV) apparatus, the de-interlacing system operating to the method” claim 1, as recited vague and unclear.

***Claim Rejections - 35 USC § 101***

Art Unit: 2624

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility” (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

Claim(s) 1- 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 1, 15, 19 and 22 recite a method , a system, a video encoder, and computer useable medium . Claim 1 recites a method of detecting local space – time details of a video signal representing a plurality of images, the method comprising: **dividing the image into one or more blocks of pixels, calculating at least one space –time feature for at least one pixel within each of said one or more blocks, calculating for each of the one or more blocks at least one statistical parameter for each of the at least one space- time features calculated within the blocks, and detecting blocks wherein the at least one statistical parameter exceeds a predetermined level**, which does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a

Art Unit: 2624

functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se. Non-functional descriptive is non-statutory regardless of whether it is claimed as residing on a computer readable medium.

1. 112, 2<sup>nd</sup> Paragraph:

Products (e.g., machines and manufactures) must distinguish over the prior art in terms of their structure (or structure + structure's function when claimed functionally) rather than function alone (MPEP 2114). Therefore, an "apparatus" that has no structural limitations at all violates 112, 2<sup>nd</sup> paragraph, in that it fails to "particularly point out and distinctly claim ...".

2. 112, 1<sup>st</sup> Paragraph – Single Means Claim:

A single claimed structural element that performs a multitude of functions, where the functions are disclosed as being performed by separate structural elements violates the 112, 1<sup>st</sup> paragraph enablement requirement. That is, a single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor (In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983)).

The same rationale (enablement) applies even when the claim is not in a "means plus function" format.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

Art Unit: 2624

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17, 18, are rejected under 35 U.S.C. 112 first and second paragraphs as attempting to define a product (i.e., machine or apparatus) entirely by virtue of its function, in the absence of any recited structure.

Products must distinguish over the prior art in terms of their structure (or structure + structure's function when claimed functionally) rather than function alone (MPEP 2114). Therefore, an "apparatus" not having structural limitations fails to "particularly point out and distinctly claim ..." the invention in accordance with 35 U.S.C. 112, 2<sup>nd</sup> paragraph.

Furthermore, while the specification disclosure may be enabling for a plurality of structural elements performing the claimed functions [1], the specification does not reasonably provide enablement for a single structural element (or no structural elements) performing all of the claimed functions. That is, given the claim in question, the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims ("A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph" because a single means claim



covers “every conceivable means for achieving the stated purpose” and “the specification disclosed at most only those means known to the inventor” - *MPEP*, at *paragraph 2164.08(a)*).

Applicant is advised to define the apparatus by virtue of the individual structural element that serve to perform the individual functions recited in the corresponding method claim.

[1] Even when an apparatus is disclosed as being computer implemented (e.g., software implemented on hardware), the requirement remains that there be some structure recited in the body of the claim (e.g., a processor and a memory storing a program which when implemented performs the method steps). For purposes of “means plus function” language, individual disclosed steps corresponding to computer program elements operating on a processor (e.g., inputting, filtering, detecting and resolving) may be considered as separate means (*Dossel*, 115 F.3d at 946–47, 42 USPQ2d at 1885).

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 - 8, 10 -13, 15 - 17, 19- 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Sohm (US. 7,260,148 B2).

As to claim 1, Sohm discloses a method of detecting local space-time details of a video signal representing a plurality of images (Abstract), the method comprising, for each image, the steps of:

A) dividing the image into one or more blocks of pixels (note, the division of a frame into blocks is described in column 4, lines 34- 36 and also see column 4, lines 64- 65),

B) calculating at least one space-time feature for at least one pixel within each of said one or more blocks ( column 5, lines 16-39, explains one of the procedure of calculating a space time feature- motion , luminance),

C) calculating for each of the one or more blocks at least one statistical parameter for each of the at least one space-time features calculated within the block ( column 9, lines 30- 35, explains the calculation of mean absolute difference in pixel values and the mean square error between pixel values (within the blocks), and

D) detecting blocks wherein the at least one statistical parameter exceeds a predetermined level (column 7, lines 9-12, the block correlation where exceeds the aetimated value- the blocks recognized as a new blocks).

As to claim 2, Sohm discloses a method according to claim 1, wherein the at least one space-time feature is selected from a group consisting of: visual normal flow magnitude, visual normal flow direction (column 4, lines 31- 36, shows the flaw of space-time features).

As to claim 3, Sohm discloses a method according to claim 1, wherein the at least one space-time feature is selected from a group consisting of: visual normal acceleration magnitude, and visual normal acceleration direction (column 5, lines 23-29, the motion feature is selected).

As to claim 4, Sohm discloses a method according to claim 1, wherein the at least one statistical parameter of step D) is selected from a group consisting of: variance, average, and at least one parameter of a probability function (column 7, lines 54- 56, explains the statistical parameters calculations).

As to claim 5, Sohm discloses a method according to claim 1, wherein the one or more blocks of pixels are one or more non-overlapping square blocks, and wherein a size of the one or more square blocks is selected from a group consisting of: 2x2 pixels, 4x4 pixels, 6x6 pixels, 8x8 pixels, 12x12 pixels, and 16x16 pixels ( column 11, lines 42-54, column 12, lines 1- 67, column 14, lines 33-37 ) .

As to claim 6, Sohm discloses a method according to claim 1, further comprising the step of pre-processing the image prior to applying step A), so as to reduce noise in the image ( column 5, lines 5-19, preprocessing is explained where the inter frame prediction error is minimized before further processing).

As to claim 7, Sohm discloses a method according to claim 6, wherein the step of pre-processing comprises convolving the image with a low-pass filter (column 5, lines 8-10 explains the process).

As to claim 8, Sohm discloses a method according to claim 1, further comprising an intermediate step between step C) and D), wherein the intermediate step comprises

Art Unit: 2624

calculating at least one inter-block statistical parameter involving at least one of the statistical parameter calculated for each block (column 7, lines 12-16, explains the process).

As to claim 10, Sohm discloses a method according to claim 1, further comprising the step of determining a pattern of temporal evolution for each of the at least one statistical parameter calculated in step C) (note, sum of absolute difference are plotted for each frame to show the luminance values, column 10, lines 19- 41, 53-65, shows the calculation of block distortion measure).

As to claim 11, Sohm discloses a method according to claim 1, further comprising the step of indexing at least part of an image comprising one or more blocks detected in step D) (column 5, lines 20- 29, explains the calculation of are of the staticial parameters . The luminance difference in two blocks or pixels for one part of the image is related to the next).

As to claim 12, Sohm discloses a method according to claim 1, further comprising the steps of calculating horizontal and vertical histograms of the at least one space-time feature calculated in step C) (note, sum of absolute difference are plotted for each frame to show the luminance values, column 10, lines 19- 41, 53-65, shows the calculation of block distortion measure).

As to claim 13, Sohm discloses a method according to Claim 1, further comprising the step of increasing data rate allocation to the one or more blocks detected in step D) (column 7, lines 23- 26, current block).

Art Unit: 2624

As to claim 15, Sohm discloses a system for detecting local space-time details of a video signal representing a plurality of images, the system comprising:

- means for dividing an image into one or more blocks of pixels (column 16, lines 12-15, the image is divided into sub-objects (blocks or pixels),

- space-time feature calculating means for calculating at least one space-time feature for at least one pixel within each of the one or more blocks (column 16, lines 31-40, explains the process of calculation of space-time feature (motion vector) ,

- statistical parameter calculating means for calculating for each of the one or more blocks at least one statistical parameter for each of the at least one space-time features computed within the one or more blocks (column 16, lines 48- 63, the statical parameter (correlations), calculating means is explained), and

- detecting means for detecting one\_or\_more blocks wherein the at least one statistical parameter exceeds a predetermined level (column 17, lines 60-61, the diversity in texture in an image results in sum of absolute difference).

As to claim 16, Sohm discloses a device comprising a system according to claim 15 (column 22, lines 59- 65, a digital signal processor).

As to claim 17, Sohm discloses a signal processor system programmed to operate according to the method of claim 1 (column 23, lines 63-65).

As to claim 19, Sohm discloses a video signal encoder for encoding a video signal representing a plurality of images, the video signal encoder comprising:

- means for dividing an image into one or more blocks of pixels ( the image is divided into blocks or pixels during the encoding process, column 4, lines 64- 65, video coding

Art Unit: 2624

is explained in column 5, lines 44- 53),

- space-time feature calculating means for calculating at least one space-time feature for at least one pixel within each of the one or more blocks(column 6, lines 32- 44, gives the definition for correlation of predictor of motion vector for space time feature values),
- statistical parameter calculating means for calculating for each of the one or more blocks at east one statistical parameter for each of the at least one space-time features computed within the one or more blocks ( column 11, lines 34- 37),
- means for adjusting the quantisation scale for the one or more blocks in accordance with the at least one statistical parameter (fig 7, column 28- 37, explains the adjusting the sum of absolute difference of pixel luminance) .

As to claim 20, Sohm discloses a video signal representing a plurality of images, the video signal comprising information regarding image segments exhibiting space-time details suitable for use with the method of claim 1 ( fig 1, elements 2 and 4 for encoding video signals consisting of information of image with space-time details, column 4, lines 65- 67).

As to claim 21, Sohm discloses a video storage medium comprising video signal data according to claim 20 ( column 20, lines 66-67, column 21, lines 1-3, gives the details of storage means).

As to claim 22, Sohm discloses a computer useable medium having a computer readable program code embodied therein ( column 21, lines 21-34, figure 15 B, element 126 is the storage medium for storing computer readable program code, the digital

Art Unit: 2624

signal processor , column 21, lines 21- 25 includes a code processor) the computer readable program code comprising:

- means for causing a computer to read a video signal representing a plurality of images program or algorithm is presented in fig 15 A-also see column 16, lines 41- 63 the use of motion vectors(space-time feature),

- means for causing the computer to divide a read image into one or more blocks of pixels(fig 15 B, element 126, memory has the program accessibility to code processor 124, the division of a frame into blocks is described in column 4, lines 34- 36 and also see column 4, lines 64-65),

- means for causing the computer to calculate at least one space-time feature for at least one pixel within each block( note, the program is stored in fig 15 B item 126, and is viable to 124 to calculate the data (space-time features etc., column 5, lines 16- 39, explains one of the procedure of calculating a space time feature- motion , luminance),

- means for causing the computer to calculate for each of the blocks at least one statistical parameter for each of the at least one space-time features calculated within the one or more blocks (column 9, lines 30- 35, explains the calculation of mean absolute difference in pixel values and the mean square error between pixel values (within the blocks), and

- means for causing the computer to detect blocks wherein the at least one statistical parameter exceeds a predetermined level (column 7, lines 9-12, the block

Art Unit: 2624

correlation where exceeds the estimated value- the blocks recognized as a new blocks, the program and instruction are availed for 126 (fig 15 B).

As to claim 23, Sohm discloses a video signal representing a plurality of images, the video signal being compressed according to a video compression standard, such as MPEG or H.26x, comprising a specified individual allocation of data to blocks of each image, wherein a data rate allocated to one or more selected blocks of images exhibiting space-time details is increased compared to the specified allocation of data to the one or more selected blocks (note, column 5, lines 40- 47, where in the BMME use in MPEG or H.263 are presented).

As to claim 24, Sohm discloses a method of processing a video signal, wherein the method of processing comprises the method of claim 1 (column 4, lines 34- 36, note video signal processing method is explained).

As to claim 25, Sohm discloses an integrated circuit comprising means for processing a video signal according to the method of claim 1( column 3, lines 4-9, the apparatus is configured to process is made to function in the manner explained).

As to claim 26, Sohm discloses a program storage device readable by a machine and encoding a program of instructions for executing the method of claim 1 (fig 15 B, element 126, the storage device for the program is shown).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject



Art Unit: 2624

matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sohm (US. 7,260,148 B2), as applied to claims above 1 - 8, 10 -14, 15 - 18, 19- 26 , and further in view of Zhang et al.,

Regarding claim 9, Sohm discloses method for motion vector estimation. Sohm fails to disclose the 2-D Markovian. Zhang discloses optical flow- based motion compensation algorithm for very low-bit – rate video coding (fig 1, paragraph B where motion field is modeled by a Markov random field).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Sohm to include 2-D Markovian. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Sohm by the teaching of Zhang in order to estimate by maximizing a posteriori or minimizing expected cost (as suggested by Zhang at page 231 paragraph B. optical flow estimation).

11. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohm (US. 7,260,148 B2), as applied to claims above 1 - 9, 10 -13, 15 - 17, 19- 26 , and further in view of Jiang et al., (US. 6,459,455 B1).

Regarding claim 14, Sohm discloses method for motion vector estimation. Sohm fails to disclose the step of inserting an image in a de-interlacing system.

Art Unit: 2624

Jiang discloses method and apparatus for deinterlacing video frames based on measured motion (column 2, lines 3-9, 15- 23, also see fig 6, a duplicated frames is inserted for deinterlacing).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Sohm to include the step of inserting an image in a de-interlacing system. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Sohm by the teaching of Jiang in order to measure of the motion to select a deinterlacing algorithm. Motion adaptive deinterlacing is performed on a pixel-by-pixel basis over the entire image. Different areas of an image may use different deinterlacing algorithms in response to the amount of motion present in those areas (as suggested by Jiang at column 2, lines 5- 9).

Regarding claim 18, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 14.

***Other prior art cited***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Proctor et al., (US. 5,926,226) discloses method for adjusting the quality of a video coder.

Wang et al., (US. 5,134,480) discloses time-recursive deinterlace processing for television – type signals.

August (US. 7,130,484 B2) discloses biased curve indicator random field filters for enhancement of contours in images.

Nefian (US. 7,209,883 B2) discloses factorial hidden markov model for audiovisual speech recognition.

Berger (US. 5, 497,435) discloses apparatus and method for encoding and decoding digital signals.

***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272- 7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sheela C Chawan/

4/23/09

Primary Examiner, Art Unit 2624

Application/Control Number: 10/579,930  
Art Unit: 2624

Page 20

Application/Control Number: 10/579,930  
Art Unit: 2624

Page 21